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WMS

IN THE CLAIMS:

Claims 1-3, 8 and 27 have been canceled previously.

Claims 18, 21, 24-25, 30, 33-34, and 36 have been previously presented.

Please cancel claims 4 and 12 and 23 without prejudice.

Please amend claims 5-7, 9-11, 13-17, 19-20, 22, 26, 28-29, 31-32, 35, and 37 as follows:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Currently amended) The bioreactor apparatus and cell culturing system of claim 4,
A bioreactor apparatus and cell culturing system providing means for cell sampling, dilution,
and fixation, comprising:

a sealed housing enclosing a cell growth reactor vessel;

a cell growth reactor vessel rotatable about its axis including a cylindrical side wall
connecting a first reactor cover plate and a second reactor cover plate, a first fluid rotary union
providing an inlet for fluid communication with a fluid medium source, a second fluid rotary union
including at least one exit outlet for medium and cells and at least one exit outlet is in fluid
communication with a filter for retaining cells and passage of medium;

means for rotating said reactor vessel about its axis;

means for collecting fluid and cell samples comprising a rotary sample collector including
a first stationary collector plate and a second rotatable collector plate in sealed connection at their
centers and in fluid communication with said reactor vessel;

said rotary sample collector comprising multiple sample collectors in said second rotatable